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REMARKS

Claims 1-7 are pending in this application.

Claims 1-6 have been rejected in the outstanding non-final office action, U.S.C. 103(a) as being unpatentable over Uyama et al. (5,700,550) in view of Coombs et al. (U.S. Patent No. 5,214,530).

It is said in the office action that there are features of the claimed invention that are disclosed by Uyama et al. The examiner indicates that Uyama fails to disclose that the transparent color shifting evaporated layers comprise flakes comprising an absorber layer, a dielectric layer and a reflector layer, and that Coombs discloses an optical variable interference device, which has an observable color change at different viewing angles. The office action states that it would be obvious to use the Coombs device which has an absorber layer, a dielectric layer, an absorber layer, a dielectric layer, a reflector, a dielectric layer, an absorber, a dielectric layer and an absorber layer that is broken into flakes, into the transparent color shifting evaporated layers of Uyama. It is further alleged that one of ordinary skill in the art would be motivated to do this because Coombs would provide Uyama with additional observable color shift colors making it hard to forge.

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Applicants have amended claim 1 to more clearly define the invention and to more closely follow the claim wording of his issued United States Patent 6,761,959 examined by the examiner of this instant application.

Claim 1 of U.S. patent 6,761,959 reads as follows:

1. A security article comprising:

a light transmissive substrate having a first surface and an opposing second surface, the first surface having a diffraction grating pattern or a holographic image pattern and the second surface being substantially planar; and
a color shifting multilayer optical film on the second surface of the substrate, the optical film comprising:
an absorber layer on the second surface of the substrate;
a dielectric layer on the absorber layer; and
a reflector layer on the dielectric layer;
wherein the optical film provides an observable discrete color shift such that the article has a first background color at a first angle of incident light or viewing and a second background color different from the first background color at a second angle of incident light or viewing, the article exhibiting an optical diffraction grating pattern effect or a holographic image pattern

effect in addition to the first and second background colors.

What is clear from the above restated patent claim is that the diffraction grating pattern or a holographic image pattern is on the first surface of the substrate and that the color shifting multilayer optical film, comprising an absorber, a dielectric and a reflector, is on the second surface of the substrate, separated by the light transmissive substrate itself.

Amended claim 1 of the present application is restated below and differs from the above patent claim 1 in that the second surface carries multilayer interference flakes, comprising an absorber, a dielectric and a reflector instead of a foil that has absorber, a dielectric and a reflector.

The effect and structure of the invention defined in issued claim 1 above and of the structure defined amended claim below are very similar; however, using flakes in accordance with the present invention that include an absorber, a dielectric and a reflector within a medium offers manufacturing advantages and provides a device that can be produced at less cost.

Amended claim 1:

1. (currently amended) A security article comprising:

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a light transmissive substrate having a first surface and an opposing second surface, the first surface having a diffraction grating pattern or a holographic image pattern and the second surface being substantially planar ~~thereon~~; and

a color shifting optical coating ~~overlying~~ on the second surface of the substrate , said optical coating including a polymeric medium and a plurality of color shifting multilayer optical interference flakes dispersed in the polymeric medium, wherein the flakes comprise an absorber layer, a dielectric layer and a reflector layer, wherein the optical film provides an observable discrete color shift such that the article has a first background color at a first angle of incident light or viewing and a second background color different from the first background color at a second angle of incident light or viewing, the article exhibiting an optical diffraction grating pattern effect or a holographic image pattern effect in addition to the first and second background colors.

The instant invention clearly defines two structures on opposite sides of a light transmissive substrate; a hologram or grating on one side and a thin film interference color shifting structure having flakes with a reflector on a second side.

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Uyama et al., do not suggest having these two optical structures on opposite sides of a light transmissive substrate. Disposing these structures in this manner has a profound synergistic visual effect. A highly color shifting device is provided wherein the hologram appears to float in space.

Uyama et al. teach a transparent hologram seal that can be applied as a security article. Uyama appears to place the hologram and color shifting layer on the same side of a light transmissive substrate. The color shifting layer is an evaporation coating layer comprised of alternatively arranged high and low refractive index layers, such that it changes color as light either transmits or reflects through the layer when the viewing angle is changed. The multilayer evaporation layer serves as the color shifting multilayer optical coating. It should be further noted that Uyama's absence of a reflector layer makes his device inferior to the applicants' embodiment having a reflector layer yielding high chroma. For Uyama to have high chroma his device is best placed on a black background. This requirement is obviated by the applicants' structure by inclusion of a reflective layer within the flakes.

In contrast to the instant claimed invention, Uyama et al do not teach that the color shifting coating layer is formed on the second surface of the substrate, opposite to the first surface, (where the hologram layer is formed).

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In contrast to the teachings of Uyama et al, applicants' claims define a structure wherein the microstructural interference pattern is disposed (a predetermined distance) on the other side of the substrate from the color shifting multilayer optical coating overlying the second surface of the substrate.

It should be clearly understood, putting the interference structure on the same or different sides of the substrate is 'not the same'; they have profoundly different visual effects.

There is a significant and unexpected advantage to having this predetermined separation between the microstructure interference pattern and the color shifting coating; it ensures that the color of the hologram will be 'true', and not a result of significant interference between the hologram or microstructural interference pattern with the color shifting coating. Applicants' claimed structure, having the hologram or interference pattern on the first side of the light transmissive substrate with the color shifting coating on the second side, essentially provides a buffer between the color shifting coating and the interference pattern to obviate or lessen any interaction between the layers. The physical effect of this is a hologram resulting in a more "true" color and an optical effect wherein the hologram seems to be floating on or above it's background. The resulting

image appears to allow the viewer to look behind or around the hologram. The structure taught by Uyama doesn't simply doesn't provide these advantages.

A hologram which preserves its integrity in the presence of a thin film color shifting coating is provided by the instant invention as defined in amended claim 1 as shown above. This has advantages over all of the structures proposed by Uyama.

Because the instant invention requires placing the interference filter such as a hologram on the opposite side of the substrate from the color shifting filter a different optical effect is achieved than placing it on the same side with the hologram. The thickness of the substrate for example PET, typically of 12 to 25 microns, is sufficiently thick that one can see "under", i.e., "around and under" the hologram to view the color shifting filter. This parallax advantageously gives the hologram an appearance of floating over a background of a color shifting coating that one does not have if both hologram and thin film filter are on the same side of the PET substrate.

Uyama does not explicitly state or show an embodiment wherein the OV coating and the hologram or grating pattern are on opposite sides of a substrate.

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In reviewing the parent United States patent, the examiner in her reasons for allowance in view of Uyama and Coombs stated the following:

> The prior art fails to teach or suggest the recited security article. The structural limitations that overcome the prior art of record include a security article comprising a light transmissive substrate having a first surface and an opposing second surface, the first surface having a diffraction grating pattern or holographic pattern and color shifting multilayer optical film on the second surface of the substrate, the optical film comprising an absorber layer on the second surface of the substrate, a dielectric layer on the absorber layer, and a reflector layer on the dielectric layer. The optical film provides an observable discrete color shift such that an article has a first background color at a first angle of incident light or viewing and a second background color different from the first background color at a second angle of incident light or viewing, the article exhibiting an optical diffraction grating pattern effect or a holographic image pattern in addition to the first and second background colors.
>
> The prior art of record specifically fails to teach a transparent substrate with a diffraction grating pattern or holographic image pattern on one side and the claimed

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color shifting multilayer optical film on the opposing surface.

After stating reasons for allowance (above) rejections under U.S.C. 103 over Uyama et al. (5,700,550) in view of Coombs et al. (5,214,530) were withdrawn in this parent application.

It is the applicants' view that these reasons clearly and similarly apply to amended claim 1 in this instant application.

There is simply no suggestion in Coombs to use his device in Uyama's structure and vice versa. Furthermore, neither Coombs or Uyama et al. teach a structure wherein a hologram or grating is on one side of a light transmissive substrate and wherein a thin film interference device having an absorber, dielectric and reflector are on the other side of the light transmissive substrate providing a color shift with viewing angle and a hologram which appears to be floating upon the color shifting background.

Claims 2 to 6 have been cancelled.

Claim 7 has been added.

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7. (new) A security article as defined in claim 1 wherein the polymeric medium includes at least a pigment vehicle for use in ink or paint.

Claims 1 and 7 are now believed to be patentable.

Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees, to Deposit Account No. 50-1465 and please credit any excess fees to such deposit account.

Respectfully submitted,

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CERTIFICATE OF FACSIMILE TRANSMISSION

I HEREBY CERTIFY that the foregoing correspondence has been forwarded via facsimile number **703-872-9306** to the COMMISSIONER FOR PATENTS, this 24 day of May 2005.